# DUAL-LAYER CARBON-BASED PROTECTIVE OVERCOATS FOR RECORDING MEDIA BY FILTERED CATHODIC ARC DEPOSITION

## ABSTRACT OF THE DISCLOSURE

A recording medium, comprising:

(a) a substrate having at least one surface;

(b) a stacked plurality of thin film layers on the at least one surface and including at least one magnetic or magneto-optical (MO) recording layer; and

(c) a protective overcoat layer on an outer surface of an outermost layer of the layer stack, comprising:

(i) a first sub-layer layer ($c_1$) of undoped tetrahedral amorphous carbon (ta-C) formed by filtered cathodic arc deposition (FCAD) on the outer surface of the outermost layer of the stacked plurality of thin film layers and having a high mass density of carbon (C) atoms greater than about 2.5 gms/cm$^3$; and

(ii) a second sub-layer ($c_2$) of nitrogen-doped tetrahedral amorphous carbon (ta-C:N) formed by FCAD on the undoped ta-C layer and having a high mass density of carbon (C) atoms greater than about 2.0 gms/cm$^3$.